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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,931	02/27/2004	Roy Greeff	303.881US1	6807
21186	7590	12/04/2006	EXAMINER	
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A. P.O. BOX 2938 MINNEAPOLIS, MN 55402			LEE, BENNY T	
			ART UNIT	PAPER NUMBER
			2817	

DATE MAILED: 12/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/789,931

Applicant(s)

GREEFF, ROY

Examiner

Benny Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-9, 11-15, 17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6; 7-9, 11, 12; 13-15, 17; 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 16 October 2006 has been entered.

The following claim has been found objectionable for reasons set forth below:

In claim 15, line 1, note that --the-- should be inserted between “wherein” and “dielectric” for grammatical correctness.

Claims 1-4, 6; 7-9, 11, 12; 13-15; 17; 18 are rejected under 35 U.S.C. 112, first paragraph, as the specification does not contain a written description of the claimed invention, in that the disclosure does not reasonably convey to one skilled in the art that the inventor(s) has possession of the claimed invention at the time the application was filed.

With respect to independent claims 1, 7, 13, 18, it should be noted that the amended limitation that the “thickness” of the dielectric coating “over the at least one microstrip line” is “greater” than the “thickness” of the dielectric coating “in at least one other area of the substrate” appears to be deviation from the original claim recitation that the “thickness” of the dielectric coating “over the at least one microstrip” is greater than “an average thickness of the coating material”, and as such appears to be “new matter”.

With respect to claim 2, it should be noted that the amended limitation appears to be significantly different from the original claim limitation, and thus has been treated as “new matter”.

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However, if applicant does not believe the above issues are “new matter”, then an appropriate explanation is required including pointing out where support for the limitation(s) in question can be explicitly found in the original specification.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,2, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over any one of Bruns, Maschotta and Anderson (each reference of record) in view of Suzuki.

Note that each reference discloses a printed circuit board arrangement, comprising: a dielectric substrate (4 in Bruns; 2 in Maschotta; 14 in Anderson); a plurality of microstrip lines (8, 10, 12 in Bruns; not numbered in Maschotta; 12 in Anderson) disposed on the substrate and a ground plane (2 in Bruns; 1 in Maschotta; 16 in Anderson) disposed on an opposed surface of the dielectric substrate; a dielectric coating (6 in Bruns; 3 in Maschotta; 14 in Anderson) disposed over each of the microstrip lines, where the dielectric coating thickness (the tables in figs. 3a, 3b of Bruns; 4 times the substrate thickness in Maschotta; $t=5.4$ mils in Anderson) is clearly thicker than one half the thickness of the dielectric substrate. As described in each reference, the effect of the dielectric coating provides for reduced cross talk between the adjacent conductors (e.g. in the forward or far end of the conductors as discussed by the abstract of Anderson). Note that in each reference the dielectric coating is a “conformal coating” which inherently increases the thickness relative to “the average conformal coating”, as far as such a recitation can be understood. However, each primary reference differs from the claimed invention in that each

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reference fails to teach or suggest a dielectric coating, which is thicker over the microstrip conductors than at other areas of the substrate.

Suzuki discloses in Fig. 1, a strip line cable including a conductor (6) disposed on a dielectric substrate (2) and includes a dielectric coating (10U) disposed over the conductor (6). Note that the dielectric coating (10U) includes a portion located over the conductor (6), which is greater in thickness relative to a portion disposed over the dielectric substrate. Note that due to the configuration of dielectric coating (10U), the signal propagating in conductor (6) experiences the benefit of less attenuation during signal propagation.

Accordingly, it would have been obvious in view of the references, taken as a whole, to have modified the dielectric coating of any one of the above references to have a dielectric coating corresponding to dielectric coating configuration (10U) as taught by Suzuki. Such a modification would have been considered obvious since it would have imparted the advantageous benefit of reduced signal attenuation, as taught by Suzuki, to like dielectric coatings from the same field of endeavor, thereby suggesting the obviousness of such a modification.

Claims 6; 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over one of Maschotta and Anderson (each reference of record) in view of Suzuki.

As described in the preceding rejection, it would have been obvious to have modified the dielectric coating of the primary references with a dielectric coating, such as taught by Suzuki, as to have provided the advantageous benefit of reduced signal attenuation as taught by Suzuki to the like structures in either primary reference.

Furthermore, note that as an obvious consequence of the modification, the dielectric coating is the same as the dielectric material of the substrate in accordance with the teaching of Maschotta or Anderson. For example see the alternate embodiment in Maschotta and the common dielectric material (14) constituting the substrate and coating in Anderson.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maschotta (of record) in view of Suzuki.

As described in the above rejection, it would have been obvious to have modified the dielectric coating of the primary reference with a dielectric coating, such as taught by Suzuki, as to have provided the advantageous benefit of reduced signal attenuation as taught by Suzuki to the like structures in the primary reference.

Furthermore, note that Maschotta discloses that the material of the dielectric substrate may be a cloth glass (i.e. fiberglass).

Claims 3, 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over the above rejection as applied to claim 1 and further in view of Forbes et al (of record).

Claims 7-9, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over any one of Bruns, Maschotta and Anderson (each reference of record) in view of Suzuki and Forbes et al (of record).

For the rejections of claims 3, 4 and claims 7-9, 11, note that the above combination with Suzuki discloses the claimed invention, except for the explicit disclosure of driving and receiving circuitry including such circuitry being memory circuitry.

Forbes et al discloses in Fig. 9 thereof, a transmission line system (920) operatively connected between a driver (e.g. 910) and a receiver (930). Moreover, as described in the

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specification of Forbes et al (e.g. cols 4, 5), a preferred application of the Forbes et al transmission line system is for dynamic random access memory (i.e. DRAM).

Accordingly, it would have been obvious in view of the references, taken as a whole, to have similarly applied the transmission lines of the above combination for use in driving and receiving circuitry for DRAM applications, such as taught by Forbes et al. Such a modification would have been considered an obvious substitution of art recognized transmission line structures, which would have provided the same signal transmission effect, thereby suggesting the obviousness of such a modification.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maschotta or Anderson (each reference of record) in view of Suzuki and Forbes et al (of record).

As described in the preceding rejection, it would have been obvious to have applied the transmission line arrangement of the combination to a DRAM arrangement for the obvious reason stated therein. Moreover, note that Maschotta or Anderson provides for the dielectric material of the dielectric coating to be the same material as that of the dielectric substrate, and as such would have suggested the obviousness of having the same dielectric material for the coating and the substrate in the above combination..

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over the above rejection a applied to claim 13 and further in view of Adachi (of record).

Claims 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bruns, Maschotta or Anderson (each reference of record) in view of Suzuki and Adachi (of record).

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For the rejection of claims 17 and 18, note that each of the above combination with Suzuki discloses the claimed invention, except for the recitation that the microstrip conductors provide reduced propagation delay.

Adachi provides an exemplary teaching of placing a dielectric layer over microstrip conductors, the resultant arrangement causes the "signal propagation to be improved in speed" (i.e. corresponding to a reduction in propagation delay) as described in the abstract thereof.


Accordingly, it would have been obvious in view of the reference, taken as a whole, to have realized that by placing dielectric layers over the microstrip conductors of any one of the primary references, such transmission line structures obviously would have provided the function of reduced propagation delay, especially in view of the recognition thereof by Adachi.

Applicant's arguments filed 16 October 2006 have been fully considered but they are not persuasive.

Applicant has argued that each one of the prior art references does not meet the limitation of the thickness of the dielectric coating over the "at least one microstrip line" being "greater than a thickness of the coating material in at least one other area of the substrate

In response, the examiner acknowledges each of the prior art references does not meet the claims, as presently amended. However, the examiner has determined that the amended limitations would have been met by the obvious combination of references under 35 USC 103 for the reasons set forth in the above rejections, as far as such amended limitation would have been understandable in view of the "new matter" rejection.

Any inquiry concerning this communication should be directed to Benny Lee at telephone number 571 272 1764.


BENNY T. LEE
PRIMARY EXAMINER
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